Graduate Research Assistantship
&
Postgraduate Research Opportunity

Condensed Matter Theory Group, BNL

Ambitious students and a postdoc with good physical intuition are needed to conduct frontier research in theoretical investigation of electronic, optical and magnetic properties of condensed matters, employing computational "first-principles" theories. Projects also include development of novel theoretical/numerical approaches to properly treat localized quantum many-body interactions in "strongly correlated materials" (eg: High-temperature superconductors, low-dimension magnetic systems), in close collaboration with several other world-leading groups in various fields.

The planned research should prove to be highly beneficial for the students' future career. (To give a rough measure, my research has lead to publication of three PRL's last year.) The students will exercise quantum many-body theories (time-dependent density functional theory, diagrammatic perturbation theory, quantum Monte Carlo, and renormalization group) for real, practically important materials, and develop new state-of-the-art numerical approaches, based on parallel computation to be performed in DOE supercomputer centers and local Beowulf clusters. They will also be exposed to the professional environment of the lab and learn to interact closely with experimentalists.

For more detail, see http://www.cmth.bnl.gov/~weiku/
or contact Dr. Wei Ku via email: weiku@bnl.gov